



STEFFEN ROBERTSON AND KIRSTEN  
Consulting Engineers

11/023/007

December 4, 1987  
SRK Project No. 13701

State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Attention: Mr. David Wham

Dear David,

Enclosed are three (3) copies of the updated "Reclamation Equipment and Costs" to accompany the "Notice of Intent" for the Tintic Project.

If you have any questions or require further details on how the cost estimates were derived, please call or let me know.

Respectfully,

STEFFEN ROBERTSON AND KIRSTEN  
(COLORADO) INC.

*Phillip M. DeDycker by GAP*

Phillip M. DeDycker  
Project Manager

PMD/gg

Enclosures

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DIVISION  
OIL, GAS & MINING

3232 South Vance Street, Suite 210, Lakewood, Colorado 80227, U.S.A.  
Tel. (303) 985-1333 Telex 383599 SRK USA Facsimile (303) 985-9947  
Other offices in: U.S.A., Canada, United Kingdom and Africa

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RECLAMATION EQUIPMENT AND COSTS (Revised 12/4/87)

Supplement to Notice of Intent

Tintic Project

North Lily Mining Company

1.0 UNIT COSTS AND RANGES

The equipment and materials that can be used in the reclamation of the Tintic Project are detailed in this section, and the unit costs tabularized. The heavy equipment needed for dozing, grading, and drainage control are available onsite from the mining operations. Equipment to be used during final reclamation and revegetation will need to be located in this area of Utah either from local ranchers or from reclamation contractors.

The costs given here are based on recent quotes from contractors in this area or from actual rates currently in use at the site. Ranges of costs and the most likely costs were verified for this estimate by calls to some local contractors. These costs reflect the current state of the local economy, but should be valid for the life of the project of three years.

Equipment onsite that can be used for reclamation:

TD20 dozer, International,

Dump truck, 15 cu yd capacity,

980C loader, Caterpillar 5.5 cu yd capacity,

120B road grader, Caterpillar equipped with rippers,

31S backhoe tractor, Kamatsu, and

637 scraper, Caterpillar 25 cu yd capacity.

Reclamation equipment (will be hauled periodically to site):

Rangeland drill,

Farm tractor,

Discs, rake, harrow, etc.,

Hay spreader (mechanical blower), and

Crimper

Revegetation Materials:

Seed,

Hay, or hydromulch,

Fertilizer, and

Soil amendments.

For estimation purposes, the costs of reclamation are broken down into equipment, labor and materials costs; then into a per acre cost for revegetation. The estimated costs are given first for typical contractor prices for this area, and then a range to be expected in central Utah depending on availability, location, and contract prices.

Estimated reclamation costs on a unit basis for the Tintic Project:

Type	<u>\$/hr</u>	
	<u>Unit</u>	<u>Range</u>
<u>Equipment</u> (Includes operator, fuel, and maintenance)		
Dozer	50	40-85
Grader	45	45-55
Loader	65	55-70
Backhoe	35	35-50
Scraper	1.25/yd	.50-2.25/yd
<u>Labor Costs</u>		
Heavy equipment operator	10	8-12
Laborer	7	7-9
Foreman	12	12-14
Subsistence/day/man	30	25-40
<u>Material Costs</u>		
Seed		
grass	5.50/lb	1-20/lb
shrub	35/lb	20-90/lb
seedlings	.80/each	.50/1.75/each
Hay	295/ton	270-315/ton
Fertilizer	295/ton	270-315/ton
Soil amendments	5.75/lb	3.50-8.75/lb

<u>Contractor Costs for Revegetation</u>	550/acre	400-1100/acre
(soil amending and preparation, seeding and mulching)		

## 2.0 PROJECT COMPONENT COSTS

The project component costs are estimated on a contractor basis, not the actual costs to the North Lily Mining Company, which will perform most of the reclamation work. The time for equipment usage is estimated either on a linear or acreage basis.

1.	Interim reclamation of the tailings dump area	
	Rough grading	
	Dozer - 24 hrs @ \$50/hr	1,200
	Grader - 8 hrs @ \$45/hr	360
	Topsoil placement	
	12,100 yds @ \$1.25/yd	15,125
	Final grading/drainage	
	Grader - 24 hrs @ 45/hr	1,080
	Revegetation	
	Materials - 15 ac @ \$285/ac	4,275
	Contractor - 15 ac @ \$550/ac	<u>8,250</u>
	Subtotal	30,290
2.	Final Reclamation	
	Site decommissioning	5,475
	Building removal, site cleanup	
	Equipment & labor estimate	5,760
	Final Grading and stabilization	
	Dozer - 80 hrs @ \$50/hr	4,000
	Grader - 56 hrs @ \$45/hr	2,530
	Backhoe - 24 hrs @ \$35/hr	840
	Topsoil placement	
	25,000 yds @ \$1.25/yd	31,250
	Drainage and sediment control	
	Dozer - 40 hrs @ \$50/hr	2,000
	Grader - 20 hrs @ \$45/hr	900